SEQUENCE LISTING



<110> Wise, Lyn M
Mercer, Andrew A
Savory, Loreen J
Fleming, Stephen B
Stacker, Stephen

<120> VASCULAR ENOTHELIAL GROWTH FACTOR-LIKE PROTEIN FROM ORF VIRUS NZ2 BINDS AND ACTIVATES MAMMALIAN VEGF RECEPTOR-2, AND USES THEREOF

<130> Sequence Listing for 09/431,833

<140> US/09/431,833
<141> 1999-11-02

<150> 60/106,689
<151> 1998-11-02

<150> 60/106,800
<151> 1998-11-03

<160> 11

<170> PatentIn Ver. 2.0

<210> 1
<211> 402
<212> DNA
<213> Orf virus

<400> 1
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gacagcaaca cgaaaggatg gtccgaagtg ctgaaaggca gcgagtgcaa gcctaggccg 120
attgttgttc ctgtaagcga gacgcaccca gagctgactt ctcagcggtt caacccgccg 180
tgtgtcacgt tgatgcgatg cggcgggtgc tgcaacgacg agagcttgga atgcgtcccc 240
acggaagaag taaacgtgac gatggaactc ctgggggcgt cgggctccgg tagtaacggg 300
atgcaacgtc tgagcttcgt agagcataag aaatgcgatt gtagaccacg attcacaacc 360
acgccaccga cgaccacaag gccgcccaga agacgccgct ag 402

<210> 2
<211> 133
<212> PRT
<213> Orf virus

<400> 2
Met Lys Leu Leu Val Gly Ile Leu Val Ala Val Cys Leu His Gln Tyr



47

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  1               5                  10                  15

Leu Leu Asn Ala Asp Ser Asn Thr Lys Gly Trp Ser Glu Val Leu Lys
            20                  25                  30

Gly Ser Glu Cys Lys Pro Arg Pro Ile Val Val Pro Val Ser Glu Thr
        35                  40                  45

His Pro Glu Leu Thr Ser Gln Arg Phe Asn Pro Pro Cys Val Thr Leu
    50                  55                  60

Met Arg Cys Gly Gly Cys Cys Asn Asp Glu Ser Leu Glu Cys Val Pro
65                  70                  75                  80

Thr Glu Glu Val Asn Val Thr Met Glu Leu Leu Gly Ala Ser Gly Ser
                85                  90                  95

Gly Ser Asn Gly Met Gln Arg Leu Ser Phe Val Glu His Lys Lys Cys
            100                 105                 110

Asp Cys Arg Pro Arg Phe Thr Thr Thr Pro Pro Thr Thr Thr Arg Pro
        115                 120                 125

Pro Arg Arg Arg Arg
    130
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<210> 3
<211> 147
<212> PRT
<213> Homo sapiens

<400> 3

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Met Asn Phe Leu Leu Ser Trp Val His Trp Ser Leu Ala Leu Leu Leu
  1               5                  10                  15

Tyr Leu His His Ala Lys Trp Ser Gln Ala Ala Pro Met Ala Glu Gly
            20                  25                  30

Gly Gly Gln Asn His His Glu Val Val Lys Phe Met Asp Val Tyr Gln
        35                  40                  45

Arg Ser Tyr Cys His Pro Ile Glu Thr Leu Val Asp Ile Phe Gln Glu
    50                  55                  60

Tyr Pro Asp Glu Ile Glu Tyr Ile Phe Lys Pro Ser Cys Val Pro Leu
65                  70                  75                  80
```

```
Met Arg Cys Gly Gly Cys Ser Asn Asp Glu Gly Leu Glu Cys Val Pro
                 85                  90                  95

Thr Glu Glu Ser Asn Ile Thr Met Gln Ile Met Arg Ile Lys Pro His
            100                 105                 110

Gln Gly Gln His Ile Gly Glu Met Ser Phe Leu Gln His Asn Lys Cys
        115                 120                 125

Glu Cys Arg Pro Lys Lys Asp Arg Ala Arg Gln Glu Asn Cys Asp Lys
    130                 135                 140

Pro Arg Arg
145
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<210> 4
<211> 191
<212> PRT
<213> Homo sapiens

<400> 4

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Met Asn Phe Leu Leu Ser Trp Val His Trp Ser Leu Ala Leu Leu Leu
  1               5                  10                  15

Tyr Leu His His Ala Lys Trp Ser Gln Ala Ala Pro Met Ala Glu Gly
             20                  25                  30

Gly Gly Gln Asn His His Glu Val Val Lys Phe Met Asp Val Tyr Gln
         35                  40                  45

Arg Ser Tyr Cys His Pro Ile Glu Thr Leu Val Asp Ile Phe Gln Glu
     50                  55                  60

Tyr Pro Asp Glu Ile Glu Tyr Ile Phe Lys Pro Ser Cys Val Pro Leu
 65                  70                  75                  80

Met Arg Cys Gly Gly Cys Ser Asn Asp Glu Gly Leu Glu Cys Val Pro
                 85                  90                  95

Thr Glu Glu Ser Asn Ile Thr Met Gln Ile Met Arg Ile Lys Pro His
            100                 105                 110

Gln Gly Gln His Ile Gly Glu Met Ser Phe Leu Gln His Asn Lys Cys
        115                 120                 125

Glu Cys Arg Pro Lys Lys Asp Arg Ala Arg Gln Glu Asn Pro Cys Gly
    130                 135                 140
```

```
Pro Cys Ser Glu Arg Arg Lys His Leu Phe Val Gln Asp Pro Gln Thr
145                 150                 155                 160

Cys Lys Cys Ser Cys Lys Asn Thr His Ser Arg Cys Lys Ala Arg Gln
                165                 170                 175

Leu Glu Leu Asn Glu Arg Thr Cys Arg Cys Asp Lys Pro Arg Arg
            180                 185                 190
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<210> 5
<211> 170
<212> PRT
<213> Homo sapiens

<400> 5

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Met Pro Val Met Arg Leu Phe Pro Cys Phe Leu Gln Leu Leu Ala Gly
  1               5                  10                  15

Leu Ala Leu Pro Ala Val Pro Pro Gln Gln Trp Ala Leu Ser Ala Gly
            20                  25                  30

Asn Gly Ser Ser Glu Val Glu Val Val Pro Phe Gln Glu Val Trp Gly
        35                  40                  45

Arg Ser Tyr Cys Arg Ala Leu Glu Arg Leu Val Asp Val Val Ser Glu
    50                  55                  60

Tyr Pro Ser Glu Val Glu His Met Phe Ser Pro Ser Cys Val Ser Leu
65                  70                  75                  80

Leu Arg Cys Thr Gly Cys Cys Gly Asp Glu Asp Leu His Cys Val Pro
                85                  90                  95

Val Glu Thr Ala Asn Val Thr Met Gln Leu Leu Lys Ile Arg Ser Gly
            100                 105                 110

Asp Arg Pro Ser Tyr Val Glu Leu Thr Phe Ser Gln His Val Arg Cys
        115                 120                 125

Glu Cys Arg Pro Leu Arg Glu Lys Met Lys Pro Glu Arg Arg Arg Pro
    130                 135                 140

Lys Gly Arg Gly Lys Arg Arg Arg Glu Asn Gln Arg Pro Thr Asp Cys
145                 150                 155                 160

His Leu Cys Gly Asp Ala Val Pro Arg Arg
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BD

165 170

<210> 6
<211> 188
<212> PRT
<213> Homo sapiens

<400> 6
Met Ser Pro Leu Leu Arg Arg Leu Leu Leu Ala Ala Leu Leu Gln Leu
1 5 10 15

Ala Pro Ala Gln Ala Pro Val Ser Gln Pro Asp Ala Pro Gly His Gln
20 25 30

Arg Lys Val Val Ser Trp Ile Asp Val Tyr Thr Arg Ala Thr Cys Gln
35 40 45

Pro Arg Glu Val Val Val Pro Leu Thr Val Glu Leu Met Gly Thr Val
50 55 60

Ala Lys Gln Leu Val Pro Ser Cys Val Thr Val Gln Arg Cys Gly Gly
65 70 75 80

Cys Cys Pro Asp Asp Gly Leu Glu Cys Val Pro Thr Gly Gln His Gln
85 90 95

Val Arg Met Gln Ile Leu Met Ile Arg Tyr Pro Ser Ser Gln Leu Gly
100 105 110

Glu Met Ser Leu Glu Glu His Ser Gln Cys Glu Cys Arg Pro Lys Lys
115 120 125

Lys Asp Ser Ala Val Lys Pro Asp Ser Pro Arg Pro Leu Cys Pro Arg
130 135 140

Cys Thr Gln His His Gln Arg Pro Asp Pro Arg Thr Cys Arg Cys Arg
145 150 155 160

Cys Arg Arg Arg Ser Phe Leu Arg Cys Gln Gly Arg Gly Leu Glu Leu
165 170 175

Asn Pro Asp Thr Cys Arg Cys Arg Lys Leu Arg Arg
180 185

<210> 7
<211> 228



51

<212> PRT
<213> Homo sapiens

<400> 7

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His Asn Arg Glu Gln Ala Asn Leu Asn Ser Arg Thr Glu Glu Thr Ile
  1               5                  10                  15

Lys Phe Ala Ala Ala His Tyr Asn Thr Glu Ile Leu Lys Ser Ile Asp
             20                  25                  30

Asn Glu Trp Arg Lys Thr Gln Cys Met Pro Arg Glu Val Cys Ile Asp
         35                  40                  45

Val Gly Lys Glu Phe Gly Val Ala Thr Asn Thr Phe Phe Lys Pro Pro
     50                  55                  60

Cys Val Ser Val Tyr Arg Cys Gly Gly Cys Cys Asn Ser Glu Gly Leu
 65                  70                  75                  80

Gln Cys Met Asn Thr Ser Thr Ser Tyr Leu Ser Lys Thr Leu Phe Glu
                 85                  90                  95

Ile Thr Val Pro Leu Ser Gln Gly Pro Lys Pro Val Thr Ile Ser Phe
            100                 105                 110

Ala Asn His Thr Ser Cys Arg Cys Met Ser Lys Leu Asp Val Tyr Arg
        115                 120                 125

Gln Val His Ser Ile Ile Arg Arg Ser Leu Pro Ala Thr Leu Pro Gln
    130                 135                 140

Cys Gln Ala Ala Asn Lys Thr Cys Pro Thr Asn Tyr Met Trp Asn Asn
145                 150                 155                 160

His Ile Cys Arg Cys Leu Ala Gln Glu Asp Phe Met Phe Ser Ser Asp
                165                 170                 175

Ala Gly Asp Asp Ser Thr Asp Gly Phe His Asp Ile Cys Gly Pro Asn
            180                 185                 190

Lys Glu Leu Asp Glu Glu Thr Cys Gln Cys Val Cys Arg Ala Gly Leu
        195                 200                 205

Arg Pro Ala Ser Cys Gly Pro His Lys Glu Leu Asp Arg Asn Ser Cys
    210                 215                 220

Gln Cys Val Cys
225
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<210> 8
<211> 197
<212> PRT
<213> Homo sapiens

<400> 8

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Met Asp Ser Arg Ser Ala Ser His Arg Ser Thr Arg Phe Ala Ala Thr
  1               5                  10                  15

Phe Tyr Asp Ile Glu Thr Leu Lys Val Ile Asp Glu Glu Trp Gln Arg
             20                  25                  30

Thr Gln Cys Ser Pro Arg Glu Thr Cys Val Glu Val Ala Ser Glu Leu
         35                  40                  45

Gly Lys Ser Thr Asn Thr Phe Phe Lys Pro Pro Cys Val Asn Val Phe
     50                  55                  60

Arg Cys Gly Gly Cys Cys Asn Glu Glu Ser Leu Ile Cys Met Asn Thr
 65                  70                  75                  80

Ser Thr Ser Tyr Ile Ser Lys Gln Leu Phe Glu Ile Ser Val Pro Leu
                 85                  90                  95

Thr Ser Val Pro Glu Leu Val Pro Val Lys Val Ala Asn His Thr Gly
            100                 105                 110

Cys Lys Cys Leu Pro Thr Ala Pro Arg His Pro Tyr Ser Ile Ile Arg
        115                 120                 125

Arg Ser Ile Gln Ile Pro Glu Glu Asp Arg Cys Ser His Ser Lys Lys
    130                 135                 140

Leu Cys Pro Ile Asp Met Leu Trp Asp Ser Asn Lys Cys Lys Cys Val
145                 150                 155                 160

Leu Gln Glu Glu Asn Pro Leu Ala Gly Thr Glu Asp His Ser His Leu
                165                 170                 175

Gln Glu Pro Ala Leu Cys Gly Pro His Met Met Phe Asp Glu Asp Arg
            180                 185                 190

Cys Glu Cys Val Cys
        195
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53

<210> 9
<211> 13
<212> PRT
<213> Orf virus

<220>
<221> UNSURE
<222> (2)
<223> Any amino acid

<220>
<221> UNSURE
<222> (4)..(7)
<223> Any amino acid

<220>
<221> UNSURE
<222> (10)
<223> Any amino acid

<220>
<223> This amino acid sequence motif can be found at
residue positions 59-71 of SEQ ID NO:2

<400> 9
Pro Xaa Cys Xaa Xaa Xaa Xaa Arg Cys Xaa Gly Cys Cys
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<210> 10
<211> 399
<212> DNA
<213> Orf virus

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gacagcacga aaacatggtc cgaggtgttt gaaagcagta agtgcaagcc aaggccaacg 120
gtcgttcccg taggcgaggc gcacccagag ctaacttctc agcggttcaa cccgcagtgt 180
gtcacagtga tgcgatgcgg cgggtgctgc aacgacgaga gcttggaatg cgtccccacg 240
gaagaggcaa acgtgacgat gcaactcatg ggggcgtcgg tctccggtgg taacgggatg 300
caacatttga tattcgtaga gcataagaaa tgcgattgta aaccacgact cacaaccacg 360
ccaccgacga ccacaaggcc gcccagaaga cgccgctag 399

<210> 11
<211> 132
<212> PRT
<213> Orf virus



54

<400> 11

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Met Lys Leu Leu Val Gly Ile Leu Val Ala Val Cys Leu His Gln Tyr
  1               5                  10                  15

Leu Leu Asn Ala Asp Ser Thr Lys Thr Trp Ser Glu Val Phe Glu Ser
             20                  25                  30

Ser Lys Cys Lys Pro Arg Pro Thr Val Val Pro Val Gly Glu Ala His
         35                  40                  45

Pro Glu Leu Thr Ser Gln Arg Phe Asn Pro Gln Cys Val Thr Val Met
     50                  55                  60

Arg Cys Gly Gly Cys Cys Asn Asp Glu Ser Leu Glu Cys Val Pro Thr
 65                  70                  75                  80

Glu Glu Ala Asn Val Thr Met Gln Leu Met Gly Ala Ser Val Ser Gly
                 85                  90                  95

Gly Asn Gly Met Gln His Leu Ile Phe Val Glu His Lys Lys Cys Asp
            100                 105                 110

Cys Lys Pro Arg Leu Thr Thr Thr Pro Pro Thr Thr Thr Arg Pro Pro
        115                 120                 125

Arg Arg Arg Arg
    130
```



545